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THE CAVE MOLLUSCA OF THE OZARK REGION

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During the summer of 1940 the author explored about fifty caves in the Ozark region. In several of these caves Mollusca were found, which are reported in this paper. Only such mollusks as were found alive in total darkness are treated. Those found about the mouths of caves, or dead shells which have been washed in, cannot be considered as being a part of the subterranean fauna.

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Zonitoides arboreus (Say)—MISSOURI: CRAWFORD Co.: Missouri Caverns, 5 miles southeast of Leasburg. Seven specimens were found on rotten wood which had been part of an old stairway. These were probably born in the cave, but their ancestors were undoubtedly brought in on lumber.

Hawaiiia minuscula (Binn.)—MISSOURI: BARRY Co.: Crystal Caverns, north of Cassville. A single specimen was found crawling over a muddy bank. It had probably been washed in through a fissure.

Deroceras laeve gracile (Raf.)—MISSOURI: CAMDEN Co.: River Cave, Hahatonka. This cave is connected with several large sink holes through which cloudbursts wash in large quantities of leaves and trash. The last such rain was about ten years ago when the floor at the lower end of the cave was covered with a six-inch layer of leaves. One mature specimen and several newly hatched young were found on these leaves.

Carychium exile C. H. Lea—MISSOURI: CAMDEN Co.: River Cave, Hahatonka. Five specimens were found with the last species.

Ferrissia kirklandi (Walker)—MISSOURI: BOONE Co.: Hall's Cave, 4 miles southeast of Rocheport. Abundant on stones in a stream, feeding on bat guano. Their eyes and pigment are normal.

Physa halei Lea—ILLINOIS: MONROE Co.: Ice Cave, Camp Vandeventer, 5 miles west of Waterloo; Morrison's Cave, 2 miles south of Burksville. MISSOURI: PULASKI Co.: Bat Cave, 5 miles south of Crocker. CHRISTIAN Co.: Smallin Cave, 2.8 miles northeast of Ozark. These caves are all connected with sink-holes through which leaves and logs wash in, providing a large quantity of organic matter upon which the snails feed. The snails are quite small with greatly reduced pigmentation.

Amnicola aldrichi antroccetes Hubricht—MISSOURI: WASHINGTON Co.: Hamilton Cave, 5.5 miles southeast of Sullivan. CRAWFORD Co.: Green's Cave, 4.5 miles southeast of Sullivan. OSAGE Co.: Dowler's Cave, 3 miles west of Cooper Hill. PULASKI Co.: Spring Cave, 5 miles south of Crocker; Piquet Cave, 4 miles southwest of Dixon. SHANNON Co.: Cave Hollow Cave, near Ebb and Flow Spring, 6 miles north of Montier. (For additional localities see Nautilus 53: 120.) A common species in subterranean streams in the eastern Ozarks. Unlike *Physa* it does not require an excess of food. It has been found in streams which seemed to be almost devoid of organic matter.

Amnicola procerpina Hubricht—No additional records are available for this species (see Nautilus 53: 121).

Musculium sp.—ILLINOIS: MONROE Co.: Morrison's Cave, 2 miles south of Burksville. About two dozen specimens were collected in a small stream. They show no modification to their subterranean life, but they are naturally unpigmented and blind.

All of the land snails were apparently recently introduced into the caves and were not modified in the least by their subterranean life. It is doubtful if they will be able to maintain themselves for many generations. The aquatic snails, on the other hand, were breeding freely and have become adapted to their cave habitats and can be considered a permanent part of the subterranean fauna. The pill-clams were breeding, and showed every indication that they would be able to maintain themselves permanently.